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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/538,492

06/09/2005

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EXAMINER

SULTANA, NAHIDA

ART UNIT

PAPER NUMBER

1791

NOTIFICATION DATE

DELIVERY MODE

04/02/2009

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/538,492	Applicant(s) MATSUMOTO ET AL.	
	Examiner NAHIDA SULTANA	Art Unit 1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 January 2009 and 02 January 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>01/14/2009</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This action is in response to the amendment received on 01/14/2009 and 01/02/2009.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3, 5, 6, and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Isozaki et al (US Publication No. 2004/0089960 A1) in view of Matsumoto et al. (JP Publication No. 2001-311827).

Regarding claim 1, Isozaki et al teach:

A method for producing a polarizing film ("process for producing polarizing film" see abstract): comprising the step of supplying a polyvinyl alcohol film in/on which iodine is adsorbed and oriented in an aqueous solution containing boric acid and dipping and treating said polyvinyl alcohol film with said aqueous solution ("the invention provides a continuous method for producing polarizing film that includes step of monoaxially stretching a polyvinyl alcohol film having a width of at least 2 m in an aqueous boric acid solution, wherein the polyvinyl alcohol film is stretched on the condition that it satisfies the following formula 1 and 2", see abstract).

However, Isozaki et al. do not teach wherein an absorbance of said aqueous solution at a wavelength of 450 nm is maintained in a range of 0.13.

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In the same field of endeavor, polarizing plate and its manufacturing method, Matsumoto et al., teach polarizing plate comprising polarizing film having high contrast at 450 nm spectrums, an absorbance range in the from 0 to 0.3, and having dyeing bath, and boric acid solution containing iodide, and water (Paragraph 0005; Paragraphs 0039-0041).

However, Matsumoto et al. do not teach that boric acid solution having specific absorbance at particular given wavelength.

It would have been obvious to one ordinary skill in the art at the time of applicant's invention to modify the process for producing polarizing film of Isozaki et al. with having specific wavelength, and absorbance for polarizing film, as taught by Matsumoto et al. for the benefit of having high contrast (abstract). Because Matsumoto et al. teach having boric acid, water, and iodide, for making polarizing film with high contrast, which results polarizing film at 450 nm, about 0 to 0.3 absorbance, it would have been obvious to one ordinary skill in the art at the time applicant's invention to use similar chemical properties present in boric acid solution for making polarizing film for desired contrast.

In regard to claims 2-3, examiner wishes to point out that recycling boric acid is well known in the art for the purpose of saving boric acid and would have been obvious to include for this purpose also for saving cost. Furthermore, aqueous solution containing boric acid recycled while maintaining the absorbance of the aqueous solution at wavelength of 450 nm in a range or 0.13 or less would have been obvious as previously presented, for the benefit of having desired contrast.

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Regarding claim 5, Isozaki et al. further teach the time limit, wherein a temperature of said aqueous solution containing boric acid is from 55°C to 85°C, and a dipping time is from 90 seconds to 1,200 seconds ("boric acid concentration of 40 g/l and zinc chloride concentration 10 g/l, at 30 °C for five minutes. With that the film was taken out and dried"; Paragraph 0056).

Regarding claim 6, Isozaki et al. further teach wherein said polyvinyl alcohol has a polymerization degree of 1,500 to 5,000 ("wherein the polyvinyl alcohol has a degree of polymerization of at least 1500"; Paragraph 0063).

Regarding claim 7, Isozaki et al. further teach:

wherein said polyvinyl alcohol film in/on which iodine is adsorbed and oriented is a film produced by uniaxially stretching an unstretched polyvinyl alcohol film in water and then dipping it in a solution containing iodine and potassium iodide ("monoaxially stretching" and "water at 30°C for 30 seconds , and dipped in a solution of iodine/potassium iodine having a concentration ratio of 1/100, at 35°C for 3 minutes"; Paragraph 0056), a film produced by dipping an unstretched polyvinyl alcohol film in a solution containing iodine and potassium iodide and then uniaxially stretching it ("thus obtained the polarizing film had a transmittance of 43.5%, a degree of polarization of 99.99%, and a dichoric ratio of 55. Its polarizing properties were extremely good" ; Paragraph— 0057) a film produced by uniaxially stretching an unstretched polyvinyl alcohol film in a solution containing iodine and potassium iodide, a film produced by uniaxially stretching an unstretched polyvinyl alcohol film in a plurality of dipping steps "dipped into water" and "dipped into solution" see Paragraph—0056) , or a film

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produced by uniaxially stretching an unstretched polyvinyl alcohol film in a dry state and then dipping it in a solution containing iodine and potassium iodide ("with that, the film was taken, dries in hot air at 40°C and then heat heated at 100 °C. The ratio of stretching distance (A)/ stretched film speed (B) was 1.0 minute; and the ratio of stretching distance (A)/stretched film width (C) was 4" Paragraph—0056).

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Isozaki et al (US Publication No. 2004/0089960 A1) in view of Matsumoto et al. (JP Publication No. 2001-311827) as applied to claim 1 above, and further in view of Tsuchimoto et al. (US Pub No. 2003/0197939 A1).

As previously mentioned, Isozaki et al. and Matsumoto teach method of making polarizing film with respect to having dipping polyvinyl alcohol film into aqueous boric acid at specific temperature, concentration (including water, potassium iodide and boric acid), and time (See examples 1-4, Paragraph 0050-0056, Isozaki), however fails to teach at this specific ratios in the concentration wherein a weight ratio of water: boric acid: potassium iodide in said aqueous solution containing boric acid is usually 100:(2-15):(2-20).

In the same field of endeavor, polarizing film and process for producing it, polarizing plate and optical element, Tsuchimoto et al. teach similar range of concentration ("it is preferable in the process that the iodine containing aqueous solution contains iodine in a range from 0.01 to 0.5 weights parts and potassium iodide in a

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range from 0.05 to 50 weight parts for 100 weight parts of water at a temperature from 10 °C to 80 °C.”; Paragraph 0011).

Thus, it would have been obvious to one ordinary skill in the art at the time of applicant's invention to combine the process of the previous art combination for producing polarizing film, with respect to similar ratios where “water: boric acid: potassium iodide in said aqueous solution containing boric acid is usually being 100:(2-15):(2-20)” as set forth in Tsuchimoto et al., for the benefit of having a desired concentration where polarizing film which exhibits a high transmittance (abstract).

Response to Arguments

Applicant argued:

Isozaki et al. US '960 discloses a method for producing polarizing film. However, Isozaki et al. US '960 describes only the concentrations of boric acid, potassium iodide and zinc chloride, and a treating temperature in an aqueous solution (i.e., 30°C) and a treating time (i.e., 5 minutes dipping) in the Examples. As the USPTO acknowledges, Isozaki et al. US '960 does not teach that an absorbance of the aqueous solution of boric acid at a wavelength of 450 nm is maintained in a specific range of 0.13 or less.

The USPTO alleges that Matsumoto et al. JP '827 teaches an absorbance of the aqueous solution of boric acid at a wavelength of 450 nm. Although Matsumoto et al. JP '827 describes the absorbance of any one layer constituting a polarizing film at a wavelength of 450 nm, it never teaches any absorbance of an aqueous solution of boric acid to be used for treating the polarizing film.

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Applicant's arguments with respect to claim 1-7 have been considered but are moot in view of the new ground(s) of rejection.

Examiner's response:

Matsumoto et al. do not teach that boric acid solution having specific absorbance at particular given wavelength.

However it would have been obvious to one ordinary skill in the art at the time of applicant's invention to modify the process for producing polarizing film of Isozaki et al. with having specific wavelength, and absorbance for polarizing film, as taught by Matsumoto et al. for the benefit of having high contrast (abstract). Because Matsumoto et al. teach having boric acid, water, and iodide, for making polarizing film with high contrast, which results polarizing film at 450 nm, about 0 to 0.3 absorbance, it would have been obvious to one ordinary skill in the art at the time applicant's invention to use similar chemical properties present in boric acid solution for making polarizing film for desired contrast with Poly vinyl alcohol film (Paragraphs: 0024, 0025; 0042-0044).

Applicant argued:

Additionally, it is noted that the tertiary cited Tsuchimoto et al. US '939 reference does not cure the above-noted deficiencies of the cited Isozaki et al. US '960 and Matsumoto et al. JP '827 references, so that its combination with Isozaki et al. US '960 and Matsumoto et al. 3P '827 is also incapable of rendering obvious any of the pending claims 1-7 currently under consideration. Further to the above it is submitted that the

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applied prior art provides no disclosure and no reason or rationale that would allow one of ordinary skill in the art to arrive at the instant invention as claimed. This fact further supports the non-obviousness of the instant invention.

Examiner's response:

Examiner understand that Tsuchimoto et al. reference do not teach absorbance of boric acid, however Tsuchimoto et al. references is used as combination to both Isozaki et al. and Matsumoto et al.

Tsuchimoto et al. teach similar range of concentration as in claim 4 (Paragraph 0011) as well as polarizing film, polyvinyl alcohol film as well as polarizing plate, ratios of material such as compound containing boron.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to NAHIDA SULTANA whose telephone number is (571)270-1925. The examiner can normally be reached on Mon- Fri 7:30 Am - 5:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Del Sole can be reached on 517-272-1130. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

NS

/Joseph S. Del Sole/
Supervisory Patent Examiner, Art Unit 1791